

Application No. 10/812,191
 Reply to Office Action dated October 10, 2006

139041-1

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Listing of the Claims:

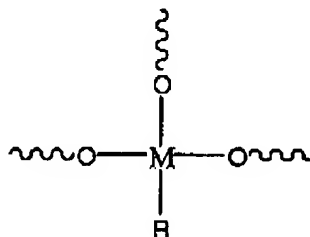
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

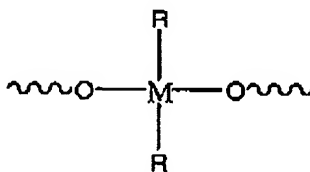
Claims 1-11 (Cancelled)

Claim 12. (Original) A method of forming an optical film, said method comprising:

(a) providing a blend of monomer A and monomer B, said monomer A comprising a polycyclic or monocyclic perfluorovinyl compound comprising at least one structural unit selected from the group consisting of formula I and formula II



I



II

wherein M is independently at each occurrence a metal selected from group 14 of the periodic table of the elements,

R is independently at each occurrence a bond, a hydrogen, an aliphatic group, a cycloaliphatic group, or an aromatic group; said polycyclic or monocyclic compound comprising at least two perfluorovinyl groups,

said monomer B being an organic compound comprising at least two $\text{CF}_2=\text{CF}$ -units;

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- (b) mixing said blend with a photo-initiator and a photo-curable monomer C, wherein said photo-curable monomer C comprises at least one of an acrylate, an epoxy, a polyimide, a silicone, a vinyl compound, a carbonate, and a diene, to yield a mixed blend;
- (c) partially polymerizing at least one of the blend and the mixed blend;
- (d) depositing said mixed blend on a substrate to form a film;
- (e) selectively exposing said film to radiation to at least partially polymerize monomer C; and
- (f) curing said film.

Claim 13. (Original) The method according to Claim 12, wherein said M comprises at least one of silicon and germanium.

Claim 14. (Original) The method according to claim 12 wherein said polycyclic or monocyclic perfluorovinyl compound comprises a silicon-oxygen network.

Claim 15. (Original) The method according to claim 14 wherein said silicon-oxygen network comprises an oligomeric silsesquioxane.

Claim 16. (Original) The method according to Claim 15, wherein said oligomeric silsesquioxane comprises a polyhedral oligosilsesquioxane.

Claim 17. (Original) The method according to Claim 16, wherein said polyhedral oligomeric silsesquioxane comprises an octahedral structure.

Claim 18. (Original) The method according to Claim 12, wherein said monomer B further comprises $\text{CF}_2 = \text{CF}-\text{X}_m-\text{R}-\text{X}_m-\text{CF}=\text{CF}_2$ wherein

X is independently at each occurrence a bond, an oxygen linkage, an amine linkage, a sulfur linkage, a silicon-containing linkage, an aliphatic group, a cycloaliphatic group, or an aromatic group,

m is independently at each occurrence an integer from 0 to about 100, and

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R is a bond, an aliphatic group, a cycloaliphatic group, or an aromatic group.

Claim 19. (Original) The method according to claim 18 wherein X comprises at least one O, N, S, Si, $-\text{CH}_2-$, $-\text{CF}_2-$, $-\text{CR}_2-$, alkyl group, alkoxy group, partially halogenated aliphatic group, or fully halogenated aliphatic group, wherein R is a bond, an aliphatic group, a cycloaliphatic group, or an aromatic group.

Claim 20. (Original) The method according to Claim 12, wherein (c) comprises the partial polymerization of the blend of monomers A and B, said partial polymerizing being carried out prior to formation of the mixed blend.

Claim 21. (Original) The method according to Claim 12, wherein said curing in (f) is carried out by at least one of heat radiation, light exposure and combinations thereof.

Claim 22. (Original) The method according to Claim 12, wherein (c) comprises heating said blend for between about 2 minutes and about 60 minutes at a temperature between about 100 °C and about 200 °C.

Claim 23. (Original) The method according to Claim 12, wherein (e) further comprises diffusing monomer C from an unexposed area into an exposed area of said film after selectively exposing said film to radiation.

Claim 24. (Original) The method according to claim 23 wherein selectively exposing and diffusing are performed to generate a desired contrast in index of refraction between exposed and unexposed areas of said film.

Claim 25. (Original) The method according to Claim 12, wherein said mixed blend has a viscosity of about 10 cSt to about 10,000 cSt.

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Claim 26. (Original) The method according to Claim 12, wherein said mixed blend is deposited on a substrate using a technique comprising at least one of spin-coating, doctor blading, dip-coating, casting, extrusion and combinations thereof.

Claim 27. (Original) The method according to Claim 12, wherein step (e) further comprises exposing said film to radiation using a photo-mask.

Claim 28. (Original) The method according to Claim 21, wherein said curing comprises heating to a temperature of about 150 °C to about 300 °C.

Claims 29-62 (Cancelled)